

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks. Claims 30-117 are in the application. Claims 39-117 have been withdrawn from consideration. Claims 30-38 are being examined.

The Examiner objected to the Information Disclosure Statement. Applicant encloses herewith a Supplemental IDS, along with copies of the non-US references.

The Examiner rejected claims 30, 32, 33 and 35-38 under 35 USC §102(b) as being anticipated by Berry et al. '376. Claim 31 is rejected under 35 USC §103 as being unpatentable over Berry et al. '376 in view of Berry et al. '376. Claim 34 is rejected under 35 USC §103 as being unpatentable over Berry et al. '376 in view of Berry et al. '902. Applicant respectfully traverses.

Claim 30 requires that two neighboring bundles of fibers are present and that both neighboring bundles of fibers are each twisted in the same direction. This is to be found in the last lines of claim 30.

An explanation of the way the wording "a neighboring bundle" is to be understood, is shown in figure 11, for example. Therefore, a "neighboring bundle of fibers, which is disposed in series with the first bundle of fibers along the oxygenator", is a bundle, which has the same torsion direction as the first bundle, but which has a different position concerning the length axis of the oxygenator.

The Examiner states that (page 3, ll. 3-5 of the Office Action), Berry et al. '376 shows the wording of claim 30 in its figure 2. Looking at that figure in detail, it can be seen that there is only one single bundle of fibers. A second, neighboring bundle of fibers is missing.

As described in column 5, lines 55-64 of Berry et al. '376, figure 2 shows the same oxygenator as figure 1, but in figure 2, the tubes (i.e. "fibers" in our application) are twisted. This is even illustrated by the twisted arrows with reference numerals 6 and 7 in figure 1.

Since in Berry et al '376, there is neither a "neighboring bundle of fibers, which is disposed in series with the first bundle of fibers along the oxygenator", nor is there any second bundle of fibers, which is "twisted in the same direction" as the

first bundle of the fibers, Berry et al '376 cannot anticipate claim 30.

The Examiner even writes on page three, line three of the Office Action:

"Berry et al disclose in Figure 2 an intravenous oxygenator having a twisted bundle of fibers" (underlining added)

Again, claim 30 demands that there be two completely separate bundles.

On top of being novel over Berry et al '376, the wording of pending claim 30 even describes an oxygenator which is of high advantage over Berry et al. Starting from a certain, given length of an oxygenator, the provision of at least two neighboring bundles of fibers along the axis of the oxygenator leads to a constellation, in which each of the fiber bundles comprises fibers, which are by far shorter than the fibers in Berry et al '376. Already the provision of "only" two fiber bundles reduces the average length of the fibers to half of the length of the fibers of Berry et al '376.

The effect of this reducing of the fiber length is described in detail in the specification of the present application, see

page 16, last paragraph of the specification, extending to the top of page 17:

"If the oxygenator has a plurality of fiber bundles arranged in series, it is proposed that they be all twisted in the same direction. The blood exerts a force onto the fibers spread into a layer, thus deforming the same. Depending on the turbulence and on the homogeneity of the flow, regions may form in which the fibers are for example too close so that the blood will find it difficult to flow through them. In view of this problem, it may be appropriate that the fibers have but the smallest possible length between two fixed fiber points, for example the connections. A constellation in which a plurality of fiber bundles are connected in series and twisted in the same direction has the advantage that the flow generated along the fibers over a long distance of the blood flow is particularly good without the various fibers becoming too unstable or so long that the gaseous mixture of oxygen and carbon dioxide flowing therein becomes too rich in carbon dioxide. In the case of a plurality of fiber bundles accordingly having a plurality of connection pairs, oxygen supply may occur at each first connection. A stable structure consisting of a very large quantity of fibers may be provided, which advantageously implies a large overall fiber surface."

Furthermore, the invention described in claim 30 could not be rendered obvious by Berry et al. Berry et al. explicitly provides one elongated bundle of fibers. Moreover, Berry et al did not recognize that it is of high advantage to have the fibers twisted in the operational state:

Berry et al '376 reads in column 5, line 60ff.:

"Figure 2 ... perspective view of the embodiment... in which the gas permeable tubes are twisted elongated to form a small insertion diameter with respect to the outside diameter of the overall bundle of tubes" (underlining added)

This shows that Berry et al '376 only discloses a twisting of the fibers for the purpose of inserting the oxygenator into the human body through an opening of the human body which is as small as possible (see column 3, line 60: "apparatus... capable of being inserted with an over-the-guidewire insertion method").

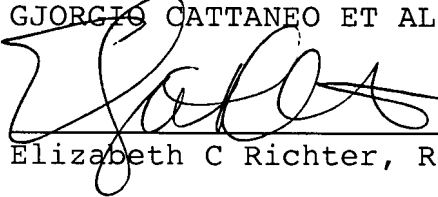
Any elements making the oxygenator complicated by dividing the bundle of fibers into a plurality of bundles would therefore not be necessary, and they would even stand in contrast to the small oxygenator that Berry et al '376 intended to propose.

The present invention as claimed in claim 30, in contrast to Berry et al '376. provides several individual bundles of fibers, because the inventor has found out that the oxygenator provides much better results when the fibers are twisted in the operational state inside the human body. During the insertion procedure, also in contrast to Berry et al. '376, the inventor keeps the oxygenator in a non-twisted state as shown in figure 1 of the present patent application.

Combining Berry et al. '376 with Berry et al. '902 would not lead to the present invention because neither reference teaches or suggests having a neighboring bundle of fibers disposed in series with the bundle of fibers along the oxygenator, with the bundles of fibers being twisted in the same direction, as claimed in claims 30 of the present invention.

Accordingly, Applicant submits that claim 30 is patentable over the cited references, taken either singly or in combination. Since claim 30 is patentable, claims 31-38, which depend therefrom, should also be patentable. Early allowance of the claims is respectfully requested.

Respectfully submitted,  
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COLLARD & ROE, P.C.

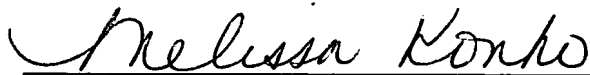
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ECR:

Enclosure: Supplemental Information Disclosure Statement  
Copies of 5 references

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